Damaging Winds & Hail

Homewood (Jefferson County), February 16, 2001

Straight-line damaging wind, not to be confused with tornadoes, do occur in some thunderstorms each year in Alabama. These winds may down trees and power lines, overturn mobile homes, and cause damage to well-built structures.

It is important to know that all wind damage is not caused by tornadoes. Reports immediately after a severe weather event usually attribute significant damage to a tornado. But frequently, strong straight-line winds are responsible for damage equivalent to that of a weak to strong tornado. In fact, these wind events are more common than tornadoes in Alabama. In a typical year, Alabama is likely to experience 10 to 20 times as many straight line wind events as tornado events.

Downbursts

Another form of non-tornadic damaging winds from thunderstorms are downbursts. A downburst refers to a very small area of rapidly descending air beneath a thunderstorm that strikes the ground, producing isolated areas of significant damage from high wind. Wind speeds in downbursts can exceed 100 mph and may be accompanied by a loud roar, often mistakenly associated only with tornadoes. They mainly occur during the summer months in a few afternoon thunderstorms. The combination of warm moist air near the surface and dry air at the mid levels of the atmosphere supports downbursts in thunderstorms.

Since downbursts develop quickly in only a select few thunderstorms, they are very difficult to detect and give weather forecasters and the general public little or no advance notice.


Even the National Weather Service is not immune from damaging winds.


A MODERN HAZARD OF THE HAIL-STORM
Automobiles riddled at Dallas, Texas, May 8, 1926

Although hail forms in every thunderstorm that develops, it only reaches the ground if the storm is strong enough and the atmospheric conditions are favorable. If hail reaches the ground, it usually occurs in springtime thunderstorms when the atmosphere is cooler, especially at the mid and high levels. Hail may take on many different sizes and shapes from some hailstones resembling flat-shaped pennies to some that may have the appearance of softballs.

Large hail can be very dangerous. It can cause damage to objects such as motor vehicles, structures, and trees. Bodily injuries or even deaths can occur if people are caught outdoors when large hail occurs.